

ABSTRACT

An appliance monitoring system for use with household appliances includes subsystems for continuously monitoring the operations of one or more appliances and a gateway through which the subsystems communicate with a remote center that oversees the servicing of the appliances. The subsystem associated with a particular appliance tracks various operating parameters and conditions, such as the total number, type, times, and duration of operating cycles; energy consumption during the cycles; and/or the states of various components such as intake valves, doors, sensors, and so forth, during the operating cycles. The subsystem then analyses the monitored information to determine if the appliance is malfunctioning and/or requires immediate or other attention. If so, the subsystem sends the monitored data and the results of the analysis in the form of an alarm or a warning message to the remote service center, to inform the center that the appliance is in need of attention. The subsystem also periodically sends to the remote center at least the retained statistical data. The remote center includes the data in a more detailed analysis of the operations of the associated appliance, the other appliances in the same household, to determine if other alarm or warning conditions exist. The data may also be analyzed in conjunction with the data from like types of appliances in other households, to determine if operations associated with modes of failure are occurring in a given appliance. Further, the data may also be analyzed to determine the patterns of use of various appliances, to recommend more efficient uses and/or to recommend replacement appliances. The remote center responds to received alarm or warning conditions based on the particular fault or condition and also on a level-of-service contract with the user. If the condition is user-correctable, the remote center contacts the user to correct the condition. If the condition requires emergency or non-emergency service, the remote center arranges the service in accordance with the provisions of the level-of-service contract.